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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Seyfried *et al.*

Serial No.: 10/042,930

Group Art Unit: To be assigned

Filed: October 18, 2001

Examiner: To be assigned

For: NOVEL ENZYMES WHICH
DEHYDRATE GLYCEROL

Attorney Docket No.: 9342-029-999

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure provisions of 37 C.F.R. §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ A list of all patents, publications, applications, or other information submitted for consideration by the office.
- 1b. A legible copy of :
 - ☐ Each U.S. patent application publication and U.S. and foreign patent;
 - ☐ Each publication or that portion which caused it to be listed on the PTO-1449;
 - ☐ For each cited pending U.S. application, the application specification including the claims, and any drawing of the application, or portion of the application which caused it to be listed on the PTO-1449 including any claims directed to that portion;
 - ☐ all other information or portion which caused it to be listed on the PTO-1449.
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or PCT International Search Report.
- 1d. ☐ Explanations of relevancy (ATTACHMENT 1(d), hereto) or English language abstracts of the non-English language publications.

2. ☒ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(b):
- ☐ Within three months of the filing date of a national application other than a continued prosecution application under §1.53(d);
 - ☐ Within three months of the date of entry of the national stage as set forth in §1.491 in an international application;
 - ☒ Before the mailing of the first Office action on the merits;
 - ☐ Before the mailing of a first Office action after the filing of a request for continued examination under §1.114.
3. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(c) after the period specified in 37 C.F.R. §1.97(b), but before the mailing date of any of a final action under 37 C.F.R. §1.113, a notice of allowance under 37 C.F.R. §1.311 or an action that otherwise closes prosecution in the application.

(Check either Item 3a or 3b)

- 3a. ☐ The Certification Statement in Item 5 below is applicable. Accordingly, no fee is required.
- 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is:
- ☐ enclosed
 - ☐ to be charged to Pennie & Edmonds LLP Deposit Account No. 16-1150.

(Item 3b to be checked if any reference known for more than 3 months)

4. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(d) after the period specified in 37 C.F.R. §1.97(c), but on or before the date of payment of the issue fee.

The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:

- ☐ enclosed.
- ☐ to be charged to Pennie & Edmonds LLP Deposit Account No. 16-1150.

The Certification Statement in Item 5 below is applicable.

5. ☐ Certification Statement *(applicable if Item 3a or Item 4 is checked)*

(Check either Item 5a or 5b)

- 5a. ☐ In accordance with 37 C.F.R. §1.97(e)(1), it is certified that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.

- 5b. ☐ In accordance with 37 C.F.R. §1.97(e)(2), it is certified that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, was known by any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

6. ☒ This application is a continuation application under 37 C.F.R. §1.60 or §1.53(b) or (d).

(Check appropriate Items 6a, 6b and/or 6c)

- 6a. ☐ A Petition to Withdraw from issue under 37 C.F.R. §1.313(b)(5) is concurrently filed herewith.
- 6b. ☒ Copies of publications listed on Form PTO-1449 from prior application Serial No. 09/405,692, filed on September 24, 1999, of which this application claims priority under 35 U.S.C. §120, are not being submitted pursuant to 37 C.F.R. §1.98(d).
- 6c. ☐ Copies of the publications listed on Form PTO-1449 were not previously cited in prior application Serial No. , filed on , and are provided herewith.

7. ☐ This is a Supplemental Information Disclosure Statement. *(Check either Item 7a or 7b)*

- 7a. ☐ This Supplemental Information Disclosure Statement under 37 C.F.R. §1.97(f) supplements the Information Disclosure Statement filed on _____. A bona fide attempt was made to comply with 37 C.F.R. §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental Information Disclosure Statement can be considered as if properly filed on _____.
- 7b. ☐ This Supplemental Information Disclosure Statement is timely filed within one (1) month of a PTO Notice under 37 C.F.R. §1.97(i).

8. ☐ In accordance with 37 C.F.R. §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:

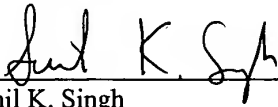
(Check Item 8a, 8b, or 8c)

- 8a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office.
- 8b. ☐ set forth in the application.
- 8c. ☐ enclosed as an attachment hereto.

9. ☒ The Commissioner is authorized to charge any additional fee required or credit any overpayment for this Information Disclosure Statement and/or Petition to Pennie & Edmonds LLP Deposit Account No. 16-1150.
10. ☒ No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than a search report of a foreign counterpart application or PCT International Search Report if submitted herewith). 37 C.F.R. §§1.97(g) and (h).

Respectfully submitted,

Date January 24, 2002


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(Reg. No.)

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EXPRESS MAIL NO.:

LIST OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO.

9342-029-999

APPLICATION NO.

10/042,930

APPLICANT

Seyfried

FILING DATE

October 18, 2001

GROUP

To be assigned

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	US 5,008,473	04/16/91	Breitkopf et al.			
	AB	US 5,340,909	08/23/94	Doerr et al.			
	AC	US 5,650,148	07/22/97	Gage et al.			
	AD	US 5,599,689	02/04/97	Haynie et al.			
	AE	US 5,872,204	02/16/99	Kuo et al.			
	AF	US 5,686,276	11/11/97	Laffend et al.			
	AG	US 5,356,812	10/18/94	Matsuyama et al.			
	AH	US 6,013,494	01/11/00	Nakamura et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AI	WO 98/21341	05/22/98	PCT				
	AJ	WO 98/21340	05/22/98	PCT				
	AK	WO 98/21339	05/22/98	PCT				

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	AL	Altschul et al. "Gapped Blast and PSI-Blast: A New Generation Of Protein Database Search Programs," <i>Nucleic Acids Research</i> , 1997, Vol. 5, No. 17, pp 3389-3402.
	AM	Altschul et al. "Basic Local Alignment Search Tool," <i>J. Mol. Biol.</i> (1990), 215, pp 403-410.
	AN	Benton et al. "Screening λ gt Recombinant Clones By Hybridization To Single Plaques In Situ," <i>Science</i> , Vol. 196, April 1977, pp 180-182.
	AO	Brock, Thomas D. "Thermophiles," <i>General, Molecular, And Applied Microbiology</i> , A Wiley-Interscience Publication, John Wiley & Sons, New York, pp 18-37.
	AP	Cameron et al., "Metabolic Engineering Of Propanediol Pathways," <i>Biotechnol. Prog.</i> 1998, Vol. 14, pp 116-125.
	AQ	Daniel et al. "Purification of 1,3-Propanediol Dehydrogenase From <i>Citrobacter freundii</i> and Cloning, Sequencing, and Overexpression Of The Corresponding Gene In <i>Escherichia coli</i> ," <i>Journal Of Bacteriology</i> , Apr. 1995, Vol. 177, No. 8, pp 2151-2156
	AR	Deshpande, Mukund V. "Ethanol Production From Cellulose By Coupled Saccharification/Fermentation Using <i>Saccharomyces cerevisiae</i> And Cellulase Complex From <i>Sclerotium rolfsii</i> UV-8 Mutant," <i>Applied Biochemistry And Biotechnology</i> , Vol. 36, 1992, pp 227-234.
	AS	Grunstein et al. "Colony Hybridization: A Method For The Isolation Of Cloned DNAs That Contain A Specific Gene," <i>Proc. Nat. Acad. Sci. USA</i> , Vol. 72, No. 10, Oct. 1975, pp 3961-3965.
	AT	Honda et al. "In Situ Reactivation Of Glycerol-Inactivated Coenzyme B12-Dependent Enzymes, Glycerol Dehydratase and Diol Dehydratase," <i>Journal Of Bacteriology</i> , Sep. 1980, Vol. 143, No. 3, pp 1458-1465.
	AU	Johnson E. A. "Klebsiella pneumoniae 1,3-Propanediol: NAD ⁺ Oxidoreductase," <i>Journal Of Bacteriology</i> , May 1987, Vol. 169, No. 5, pp 2050-2054.



AV	Kaufman, Randal J. " <u>Selection And Coamplification of Heterologous Genes In Mammalian Cells</u> ," <i>Methods In Enzymology</i> , Vol. 185, pp 537-566.		
AW	Luers et al. " <u>Glycerol Conversion to 1,3-Propanediol By <i>Clostridium pasteurianum</i>: Cloning And Expression Of The Gene Encoding 1,3-Propanediol Dehydrogenase</u> ," <i>FEMS Microbiology Letters</i> 154 (1997) pp 337-345.		
AX	Macis et al. " <u>Properties and Sequence of the Coenzyme B12-Dependent Glycerol Dehydratase of <i>Clostridium pasteurianum</i></u> ," <i>FEMS Microbiology Letters</i> 164 (1998), pp 21-28.		
AY	Poppe et al. " <u>Kinetic Investigations With Inhibitors That Mimic The Posthomolysis Intermediate In The Reactions Of Coenzyme-B12-Dependent Glycerol Dehydratase And Diol Dehydratase</u> ," <i>European Journal Of Biochemistry</i> , Vol. 245, 1997, pp 398-401.		
AZ	Seyfried et al. " <u>Cloning, Sequencing, And Overexpression Of The Genes Encoding Coenzyme B12-Dependent Glycerol Dehydratase Of <i>Citrobacter freundii</i></u> ," <i>Journal Of Bacteriology</i> , Vol. 178, No. 19, Oct. 1996, pp 5793-5796.		
BA	Shilo et al. " <u>DNA Sequences Homologous To Vertebrate Oncogenes Are Conserved In <i>Drosophila Melanogaster</i></u> ," <i>Proc. Natl. Acad. Sci. USA</i> , Vol. 78, No. 11, Nov. 1981, pp 6789-6792.		
BB	Takamasa et al. " <u>Identification And Expression Of The Genes Encoding A Reactivating Factor For Adenosylcobalamin-Dependent Glycerol Dehydratase</u> ," <i>Journal Of Bacteriology</i> , Vol. 181, No. 13, July 1999, pp 4110-4113.		
BC	Takamasa et al. " <u>Cloning, Sequencing, And High Level Expression Of The Genes Encoding Adenosylcobalamin-Dependent Glycerol Dehydrase Of <i>Klebsiella pneumoniae</i></u> ," <i>The Journal Of Biological Chemistry</i> , Vol. 271, No. 37, Sep. 13, 1996, pp 22352-22357.		
BD	Tong et al. " <u>1,3-Propanediol Production By <i>Escherichia coli</i> Expressing Genes from the <i>Klebsiella pneumoniae dha regulon</i></u> ," <i>Applied And Environmental Microbiology</i> , Dec. 1991, Vol. 57, No. 12, pp 3541-3546.		
BE	NCBI Acession No. AF181848, <i>Caloramator viterbiensis</i> 16S RNA gene, partial sequence.		
<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"><u>EXAMINER</u></td> <td style="width: 50%;"><u>DATE CONSIDERED</u></td> </tr> </table>		<u>EXAMINER</u>	<u>DATE CONSIDERED</u>
<u>EXAMINER</u>	<u>DATE CONSIDERED</u>		
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>			